

## JAXA's long term vision and Space Science

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'JAXA Long-term Vision' was released on April 6, 2005. The Long-term Vision Drafting Committee (Chairman: Kaoru Mamiya, Vice President of JAXA) and its subordinate organization, the Task Team, were founded in September 2004. The vision was drafted after six months of intensive effort and was presented to the Space Activities Commission (SAC) and then released to the press. The vision was completed with the support of many other people, not just those directly involved. We introduce here JAXA long-term vision focusing on space science and add our some comments.

The budget is assumed to reach about twice the current level. This is based on our estimate (or our expectation) that the level must increase as public understanding of space development and aviation research is increased. For projects that need much more funding, such as the reusable transportation system and manned space flight missions, the vision states: will be according to nation's judgement which will be based on actual progress in the next decade. Although there is a criticism that this expression merely postpones the decision, we believe that this approach is correct. It depends how JAXA will shift its existing research and focus its direction in the next ten years, that is, it leaves JAXA management to the future.

The long-term vision comprises the following five main themes:

- (1) Realization of safe and prosperous society
- (2) Toward creation of knowledge and expansion of fields of activity
- (3) Toward establishment of wide, flexible capability in space activity
- (4) Toward growth of space industry
- (5) Toward growth of aviation industry and breakthrough of future air-transportation systems.

The theme 2 comprises two sub themes: (a) space observation and solar system exploration and (b) lunar exploration and utilization. Space science is included in this 2 themes, apart from research and development across JAXA's overall activities such as transportation system.

In space-science projects, it is difficult to set up predetermined, specific results of observation. All we can do is to deploy the optimum observation system possible. In some cases we can get a un-predicted 'Big Suprize' from the system. Accordingly, it was very hard to produce a strategic description showing pictures 10 or 20 years later, while considering the past and current space science situation. Further, in drafting the vision we had to consider two aspects, 'how to proceed with space developments as JAXA' and 'how to advance space science as scientists or researchers.' These positions were sometimes contradictory, making our work more difficult.

Since space science is advanced by inter-university joint research, we tried to not only have discussions in various meetings at ISAS, but also share common awareness, as far as possible, with the research-steering committees of the Science Council of Japan, various communities, etc. Especially, when selecting terms indicating direction of future space science, the discussions with younger university researchers continued late into the night to find appropriate terms that are easy for the public to understand as well as attractive, yet not misleading about the nature of science.

As a result, we decided to divide space science into (a) space observation and (b) solar system exploration. Further, we selected the phrase; we aim at making Japan a top science center for space science through all such activities. The term 'top science center' was intended to express an image that space-science researchers across the world would get together for 'willing to research here,' not just construct a 'box' or organization. Further, we decided to deploy a function of 'deep space port' at Lagrangian point, which would become a base to perform mankind's wide-ranging space activity, not just support our space observation and solar system exploration.